

JAPAN

EDICT OF GOVERNMENT

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JIS A 1313 (2003) (English): Inspection standard
of rolling fire doors

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*The citizens of a nation must
honor the laws of the land.*

Fukuzawa Yukichi

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JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS A 1313 : 2003
(JSDA/JSA)

**Inspection standard of rolling fire
doors**

ICS 13.220.20; 91.060.50

Reference number : JIS A 1313 : 2003 (E)

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee, as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Rolling Shutters and Doors Association (JSDA)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14. Consequently **JIS A 1313 : 1995** is replaced with this Standard.

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Date of Establishment: 1979-04-11

Date of Revision: 2003-07-08

Date of Public Notice in Official Gazette: 2003-07-08

Investigated by: Japanese Industrial Standards Committee
Standards Board
Technical Committee on Architecture

JIS A 1313:2003, First English edition published in 2004-02

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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Printed in Japan

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Inspection standard of rolling fire doors

1 Scope This Japanese Industrial Standard specifies inspection items, inspection methods and acceptance criteria for inspection of functions of rolling fire doors provided to a building and a workpiece.

2 Normative reference The following standard contains provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent edition of the standard (including amendments) indicated below shall be applied.

JIS C 1302 *Insulation resistance testers*

3 Inspection items Inspection items shall be as follows.

- a) **Completion inspection** In a completion inspection, whether or not respective items mentioned on a design book are fulfilled and all items specified in clause 4 are inspected (see Attached Table 1).
- b) **Regular inspection** In a regular inspection for maintenance and control, all items, excepting 4.1, specified in clause 4 are inspected.

4 Inspection method and acceptance criteria

4.1 Dimensional inspection in completion The dimensional inspection in completion shall be as follows.

- a) The dimensional tolerance on an inside width and the sum of right and left engaged lengths shall be as given in Table 1.

Table 1 Dimensional tolerance on inside width and sum of right and left engaged lengths

Unit: mm

Inside width of shutter (m)	Dimensional tolerance on inside width	Sum of right and left engaged lengths	Minimum engaged length on one side
3.0 max.	± 4	90 min.	20
Over 3.0 up to and incl. 5.0		100 min.	
Over 5.0 up to and incl. 8.0		120 min.	

- b) The engaged length of a slat and a guide-rail shall be as given in Table 1.
- c) The dimensional tolerances on the groove width of a guide-rail shall be ± 2 mm to the size given in a plan.

4.2 Inspection in attached state

4.2.1 Inspection to be carried out in an open state The inspection to be carried out in an open state shall be as follows.

- a) The lintel and the guide-rail are free from bend and damage and the guide-rail is free from any obstacle to opening and closing.
- b) The lintel and the guide-rail which have a smoke-blocking mechanism are free from wear, damage and deformation.
- c) The seat plate is in a good settled state to the lintel.
- d) The manual closing device is fixed near a shutter, easy to operate and indicates directions for use.

4.2.2 Inspection to be carried out in a closed state The inspection to be carried out in a closed state shall be as follows.

- a) The slat and the seat plate are free from bend, deformation, damage and rust.
- b) The lintel or guide-rail having a smoke-blocking apparatus is free from a clearance detrimental to smoke-blocking.
- c) The seat plate is uniformly in contact with a floor surface.
- d) The joint part of the lintel and the guide-rail is free from a detrimental clearance.

4.2.3 Inspection of opening and closing mechanism and inside of ceiling The inspection of an opening and closing mechanism and of the inside of a ceiling shall be as follows.

- a) The opening and closing device is firmly attached and free from oil leak. Further, there is a space necessary for check.
- b) The bracket of a winding shaft is firmly attached, and its bearing is free from abnormality and is sufficiently oiled.
- c) For shaft sprockets, every bracket lies on the same circle and is free from damage. Further, for adjustment of the length of a roller chain which drives a winding shaft, the chain is allowed to slacken as given in Table 2 and free from damage.

Table 2 Slack length of roller chain

State of arrangement	Slack length
Horizontal	2 % to 4 % of the distance between shafts
When the distance between shafts is 1 m or longer and when normal and reversal rotations are repeated by a vertical or a heavy load.	1 % to 2 % of the distance between shafts

- d) For a shutter which shuts automatically by means of a thermal fuse device, the thermal fuse is firmly attached to an incombustible thermal insulating material at a ceiling facing the room or an upper part of the frame where it can sense heat effectively. Further, a wire rope which connects the opening and closing device and the fuse device is free from corrosion and fixed not to disturb its movement.

- e) An automatic closing device is firmly fixed and its moving part is fixed not to disturb its movement.
- f) A control board for electric opening and closing device can be safely and easily inspected. Further, the terminal part is free from slack and a contact of each switch is good.
- g) Insulation resistance between the earth and each line is inspected under a condition wherein the switch is off and a limit switch is not functioned, i.e. under a condition wherein the shutter is semi-open by using an insulation resistance tester of 500 V and 100 MΩ specified in **JIS C 1302** and the result conforms to Table 3.

Table 3 Insulation resistance between the earth and each line

Use of a circuit	Use voltage of circuit V	Insulation resistance MΩ
Motor main circuit	300 max.	0.2 min.
	Over 300	0.4 min.
Control circuit Signal circuit	150 max.	0.1 min.
	Over 150 up to and incl. 300	0.2 min.

- h) A link controller of a sensor linkage mechanism is fixed to a position where it can be monitored at all times. For those having a preliminary power source built-in, the storage battery shall maintain its operating voltage even after loading.
- i) The storage battery for a linkage relay to prevent hazards in the sensor linkage mechanism shall maintain its operating voltage even after loading.

4.3 Inspection of working Inspection of working shall be as follows.

- a) In the case of using an electric opening and closing device, the opening and closing action is surely carried out by operation of a switch.
- b) A limit switch stops the shutter at accurate positions of the upper limit of opening and the lower limit of closing.
- c) When the shutter is opened and closed, there shall be no abnormal sound, and resistance of the smoke-blocking mechanism part of a lintel and a guide-rail is little and the shutter is smoothly operated.
- d) When a manual closing device is operated, closing of the shutter is surely completed.
- e) An automatic closing device is surely functioned by a starting indication from a link controller by making a heat sensor, a fume sensor or a heat-fume composite type sensor sense, and the shutter is completely closed.
- f) For the shutter with an obstacle sensor (general type), when the obstacle sensor (general type) senses any obstacle during closing motion by a signal of a push-button switch or the like, the shutter stops its movement automatically on the spot or pauses to reverse its movement to open and then stops.

- g) For the shutter with an obstacle sensor (automatic closing type), when the obstacle sensor (automatic closing type) senses any obstacle during closing motion by a starting indication from a link controller, the shutter stops its movement automatically and after removing the obstacle, restarts its movement to completely close.
- h) An average speed in opening and closing a shutter shall be as given in Table 4.

Table 4 Average speed in opening and closing of shutter

Unit: m/min

Opening and closing state	Opening height		
	Under 2 m	2 m or over to and excl. 5 m	5 m min.
Electrical opening and closing	2 to 6 (10 to 30)	2.5 to 6.5 (9.2 to 24)	3 to 9 (6.7 to 20)
Closing by dead load	2 to 6 (10 to 30)	3 to 7 (8.6 to 20)	3 to 9 (6.7 to 20)

Remarks : The value in brackets is indicated by s/m.

- i) In the case of using a manual opening and closing device,
- 80 N or less in rotating force for a handle type operation
 - 150 N or less in lowering force for a chain type operation
- shall be applied to lifting.

Further, for this inspection, a shutter curtain is made stop at a position 200 mm distant from the floor surface and a rotating force of handle or a lowering force of chain at that time is measured.

5 Recording of inspection Results of the inspection shall be recorded as follows.

- a) Results obtained by the inspection method of clause 4 shall be recorded to keep, or used as the report.
- b) On the inspection table, the name and installing position of the fitted building or workpiece, year and month of completion, year and month of inspection, the inspector's name, the manufacturer's name, presence of abnormalities to inspection items and the treated condition shall be recorded.

Attached Table 1 List of inspection items

Inspection items		
Measurement of dimension	1	Inner width
	2	Engaged length of a slat
	3	Guide-rail groove width
Open condition	4	Damage of a lintel and a guide-rail
	5	Damage of a smoke-blocking device
	6	Setting of a seat plate in a lintel
	7	Manual closing and its marking
Closed condition	8	Damage of a slat and a seat plate
	9	Contact condition of a smoke-blocking material
	10	Contact condition of a seat plate and a floor surface
	11	Joint part of a lintel to a guide-rail
Opening and closing mechanism and the inside of a ceiling	12	Fitting slackness and oil leak of the opening and closing device
	13	Bearing of a winding shaft
	14	A sprocket and a roller chain
	15	Attached condition of a thermal fuse device
	16	An automatic closing device
	17	Terminal and contact of a control board
	18	Measurement of an insulation resistance
	19	A link controller and a storage battery
Working condition	20	Storage battery for a link relay to prevent hazards
	21	Operating condition by a push button
	22	Working condition of a limit switch
	23	Abnormal sound during opening and closing operation
	24	Quality of manual closing
	25	Quality of link closing
	26	Working condition of an obstacle sensor (general type)
	27	Working condition of an obstacle sensor (automatic closing type)
	28	Closing speed
	29	Manual operating force

Errata for JIS (English edition) are printed in *Standardization Journal*, published monthly by the Japanese Standards Association, and also provided to subscribers of JIS (English edition) in *Monthly Information*.

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